

NASA Science Mission Directorate (SMD) Top-Level Goals

- Astrophysics: Discover the Secrets of the Universe
- Planetary Sciences: Searching for Life in the Solar System and Beyond
- Earth Science and Heliophysics: Safeguarding and Improving Life on Earth

NASA Earth Science Fleet

Missions: Present through 2023

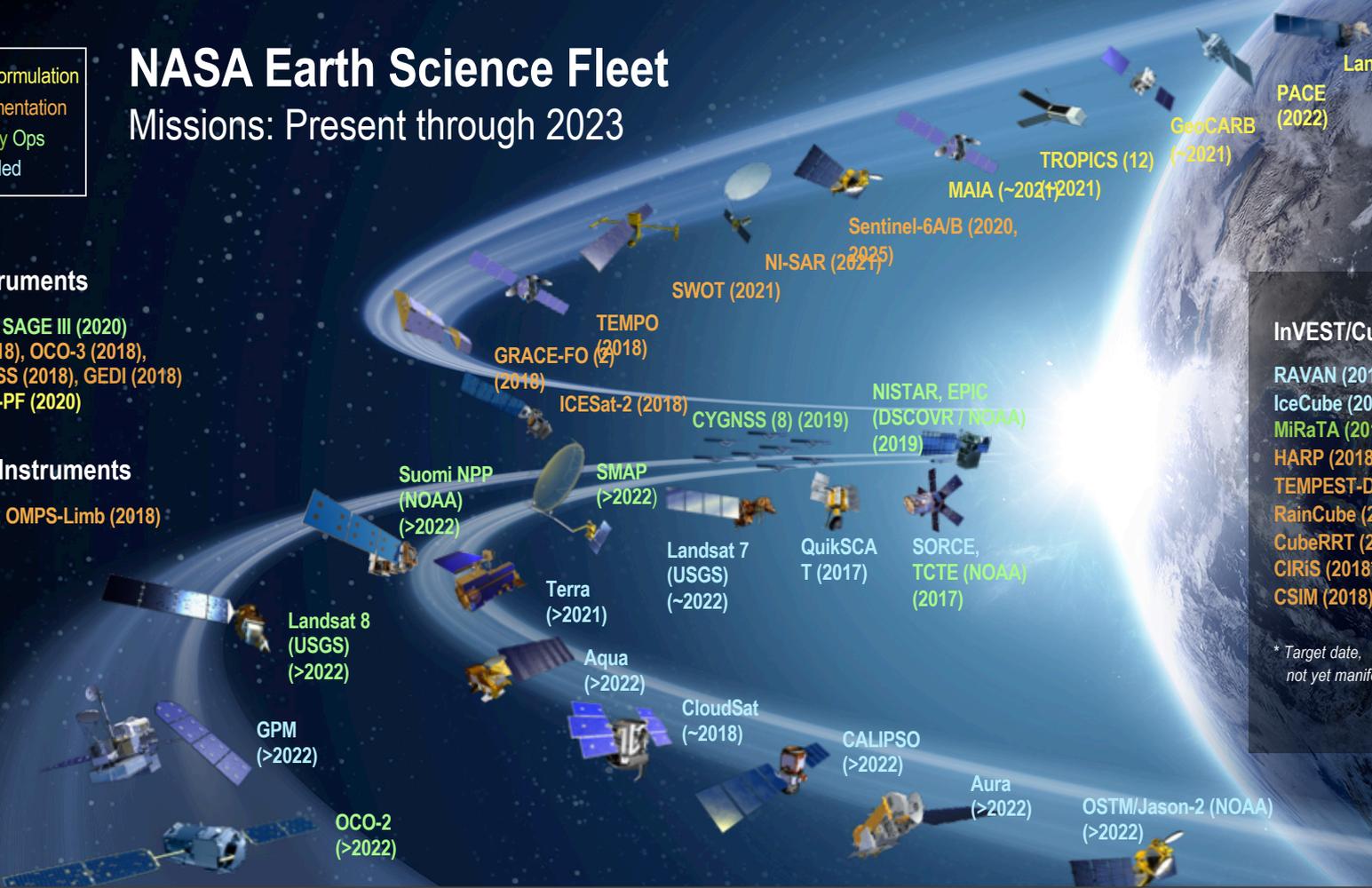
- (Pre)Formulation
- Implementation
- Primary Ops
- Extended Ops

ISS Instruments

LIS (2020), SAGE III (2020)
 TSIS-1 (2018), OCO-3 (2018),
 ECOSTRESS (2018), GEDI (2018)
 CLARREO-PF (2020)

JPSS-2 Instruments

RBI (2018), OMPS-Limb (2018)

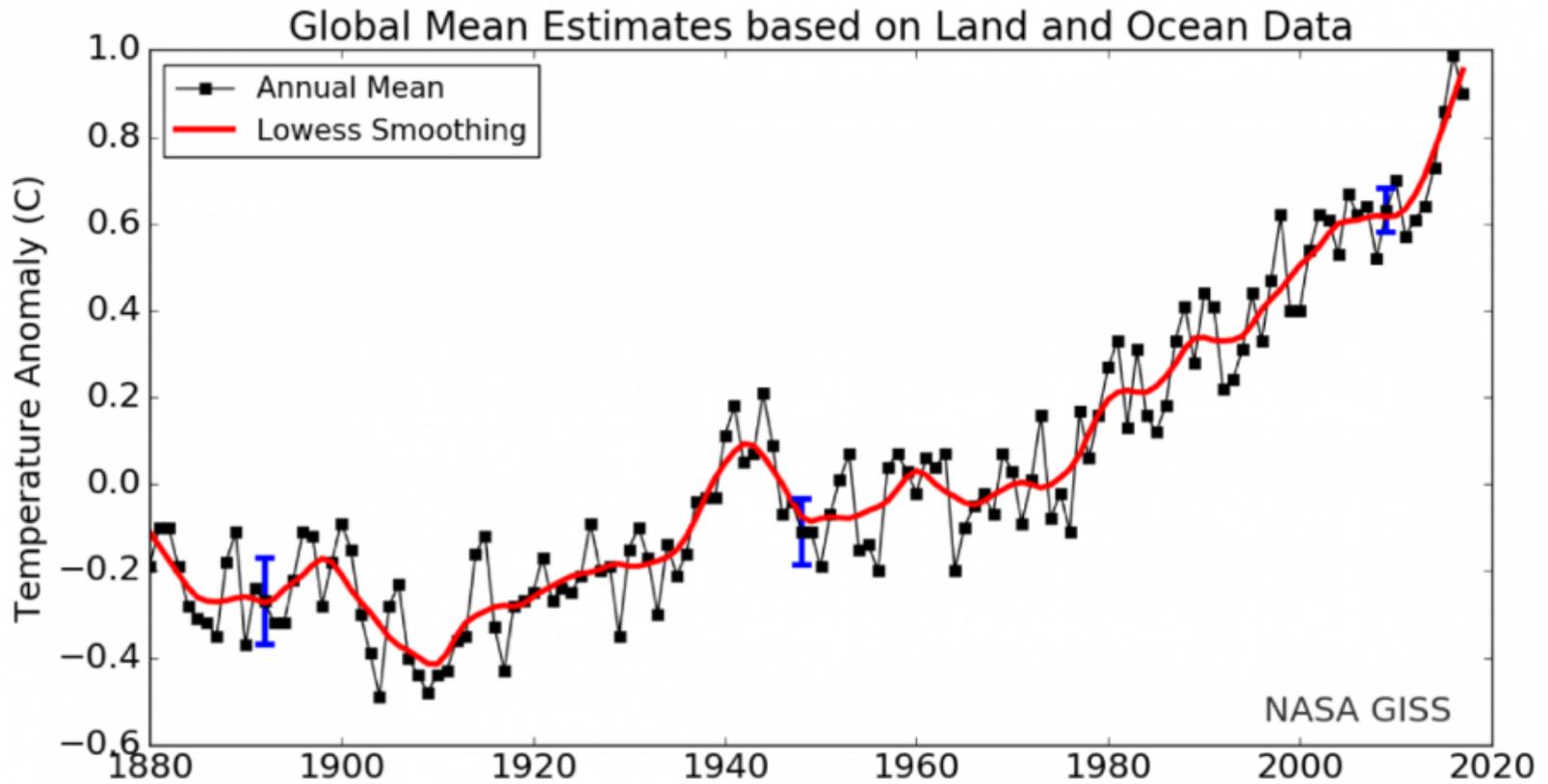


InVEST/CubeSats

- RAVAN (2016)
- IceCube (2017)
- MiRaTA (2017)
- HARP (2018)
- TEMPEST-D (2018)
- RainCube (2018)
- CubeRRT (2018)
- CIRIS (2018*)
- CSIM (2018)

* Target date, not yet manifested

Globally, 2017 was the second hottest year on record

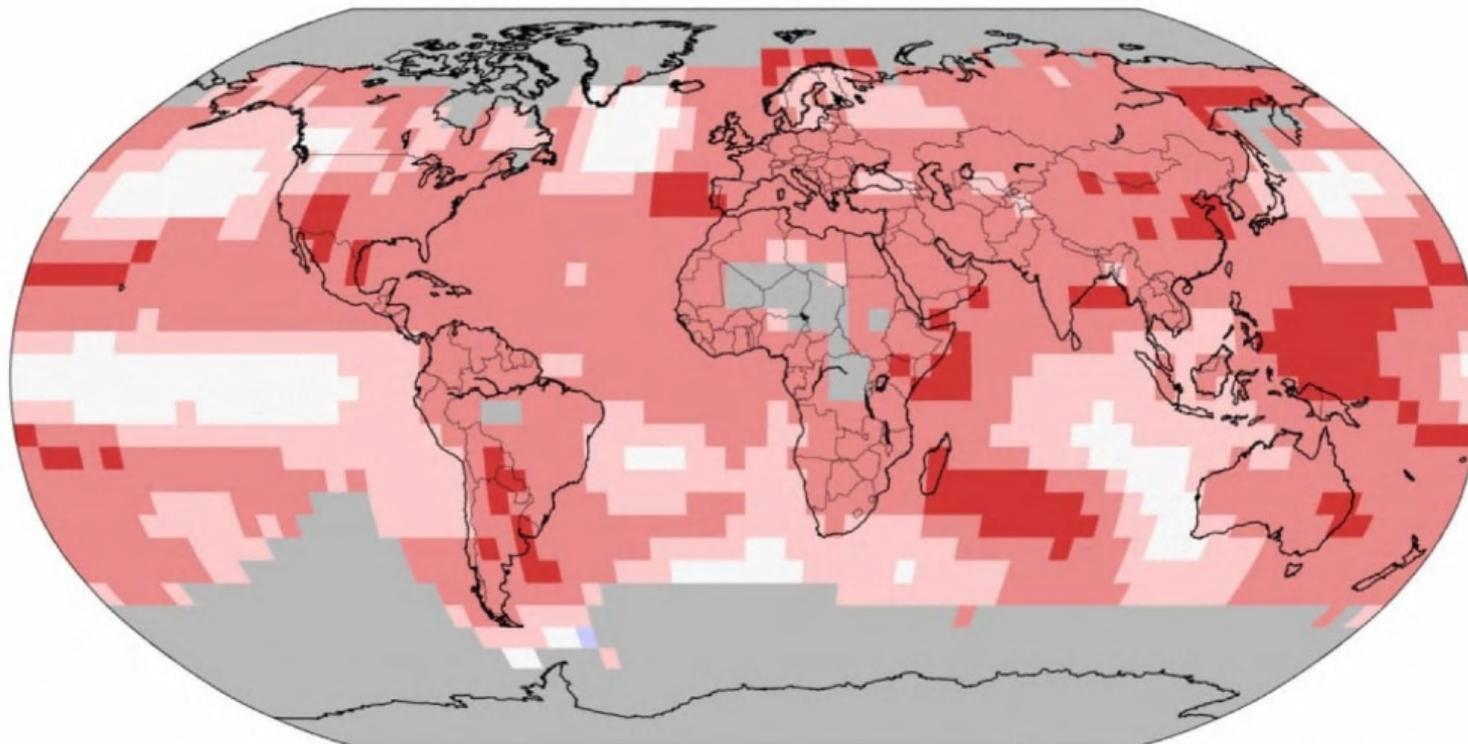


(NASA)

Land & Ocean Temperature Percentiles Jan–Dec 2017

NOAA's National Centers for Environmental Information

Data Source: GHCN–M version 3.3.0 & ERSST version 4.0.0




**Record
Coldest**


**Much
Cooler than
Average**


**Cooler than
Average**


**Near
Average**


**Warmer than
Average**


**Much
Warmer than
Average**


**Record
Warmest**



NOAA

Tue Jan 16 07:02:31 EST 2018

The View From HQ

2017 was once again a busy year for the NASA Terrestrial Ecology Program

Some TE Highlights

- ABoVE Airborne Campaign – a major investment from NASA
- Funded 15 new Carbon Research Program projects
- Terra-Aqua-SNPP solicitation
- New Investigator Program
- NESSF Graduate Fellowships
- Inter-Disciplinary Studies (IDS) – Methane, Carbon Partitioning, Ecology at Land-Water Interfaces
- Preparations for Earth Venture Instrument 5 (EVI-5)
- Earth Venture Suborbital-3 is on the streets
- OCO-2 Science Team is under review

Thriving on Our Changing Planet

A Decadal Strategy for Earth Observation from Space

#EarthDecadal

*The National
Academies of*

SCIENCES
ENGINEERING
MEDICINE

2017 Decadal Survey Recommendations

Address 35 key science/applications questions in six categories

- Coupling of Water and Energy Cycle
- Ecosystem Change
- Extending and Improving Weather and Air Quality Forecasts
- Sea Level Rise
- Reducing Climate Uncertainty
- Geological Hazards and Disasters

Recruiting a Program Scientist for the Terrestrial Ecology Program at NASA Headquarters

**Serving on NASA Peer Review Panels is
your obligation to NASA and to our
scientific community.**

- In economics, a **free rider problem** occurs when people who benefit from resources do not “pay” for them, resulting in an under-provision of those resources.
- Situations subject to free-riding are characterized by the inability of the market to exclude non-payers.
- Individuals in a community may reduce their participation if they believe that other members of the community will free ride.

It is my intention that ABoVE be a nine- to ten-year research program.

- ABoVE continues to have a very high profile within NASA and across the federal government and beyond (GCRP, IARPC, Arctic Ministerial)

